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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,738	10/13/2000	Anil K. Agarwal	A7451	6027

7590

05/03/2002

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EXAMINER

LEE, CHI HO A

ART UNIT

PAPER NUMBER

2663

DATE MAILED: 05/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/689,738

Applicant(s)

AGARWAL ET AL.

Examiner

Andrew Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-11 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Liebowitz et al U.S. Patent Number 5,812,545.

Re Claims 1 and 14, fig 1 teaches plurality of terminals 12 which supports IP multicasting, broadcasting capabilities (See col. 2, lines 22-30); further teaches the GT 12 (a router server) illustrated by fig 3, which includes the Router for establishing and maintaining routing information; fig 3 further includes the PCD (a controller) which operates the switch to organizes bursts in at least one of a plurality of time slots (See col. 2, lines 48-52).

Re Claim 2, refer to Claim 1, wherein the system of fig 1 supports broadcast capabilities.

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Re Claim 3, refer to Claim 1, wherein PCD includes the FAD 66 which monitors the stream requests from user access device 42 to initiate the IP multicast service (See col. 5, lines 58-68).

Re Claim 4, further teaches that FAD generates bandwidth requests to be transmitted to the MT (Management Terminal), wherein the MT determines how to allocate bandwidth among all of the terminals 12 based on the collective bandwidth requests (See col. 6, lines 1-12). Hence, once the MT receives the bandwidth requests, the plurality of terminals 12 listens for the allocated bandwidth by the MT.

Re Claim 5, refer to Claim 1, wherein the PCD allocates burst using the Burst Plan (See col. 2, line 52).

Re Claim 6, refer to Claim 1, wherein the controller allocates bursts for multicast.

Re Claim 7, refer to Claim 4, wherein the PCD dynamically allocates time slots according to the user bandwidth requests not exceeding specific amount of capacity.

Re Claim 8, refer to Claim 3, wherein the FAD monitors for stream requests and releases in every frame received from user terminal devices, wherein the change in the multicast traffic volume is monitored by the FAD and reported to the MT.

Re Claim 9, IP multicast packet provides exchange routing information in the header.

Re Claims 10 and 11, refer to Claim 9, wherein the PCD supports IP multicasting capabilities in the GT (router server).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liebowitz et al U.S. Patent Number 5,812,545.

Re Claims 12 and 13, Liebowitz et al teaches a IP multicasting capabilities in a TDMA satellite network. However, Liebowitz et al fails to explicitly teach the DVMRP and PIM-SM multicasting protocols. However, one of ordinary skilled would have been motivated to use known multicasting protocols for system conformity and compatibility. Therefore, it would have been obvious to one ordinary skilled to used known multicasting protocols to support multicasting services.

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liebowitz et al U.S. Patent Number 5,812,545 in view of Francis et al U.S. Patent Number 5,331,637.

Re Claim 15, refer to Claim 14, Liebowitz et al teaches the terminal 12 (source) transmitting (unicasting IP multicasting packet) to a satellite and for transmitting to the GT (router server), wherein the satellite facilitates forwarding/broadcasting of the IP multicast packets to/from the terminals. Liebowitz et al fails to explicitly teach the transmission of the Prune Message. However, Francis et al teaches in a conventional

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DVMRP tree construction, wherein each router receives a multicast packet and sends a copy of the packet to each of the routers attached thereto (broadcasting said IP multicast packets from the router server). Routers, which receive these packets, may indicate that they are not on a path to a destination node of the multicast group by transmitting a prune message to the router from which the multicast packet was received (See col. 4, lines 1-32). One of ordinary skilled would have been motivated by Francis to implement the "prune messaging" (a non receiving set of said terminals) into the multicast service of Liebowitz et al to determine the shortest path to the destination. With the received "prune message" the enhanced routing table in the router 42 of fig 3 can be updated (refining a receiving set of said terminals) to construct the shortest tree path to the destination. Furthermore, the broadcasting of the IP multicast packets into at least one slot can be facilitated by the PCD 52 of the terminal 12.

Therefore, it would have been obvious to one ordinary skilled incorporate the prune messaging of Francis et al into the routing function of the Liebowitz to facilitate efficient routing of the IP multicast packets.

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liebowitz et al U.S. Patent Number 5,812,545 in view of Virgile U.S. Patent Number 5,898,686.

Re Claim 16, Liebowitz et al teaches the terminal 12 (router) transmitting (unicasting IP multicasting packet) to a satellite (rendezvous point) and for transmitting to the GT (router server), wherein the satellite facilitates multicasting/broadcasting of the

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IP multicast packets to the terminals. Liebowitz et al fails to explicitly teach the sending of the "join message. However, Virgile teaches in fig 5, step S11 which determines whether the JOIN HOST GROUP PACKET is received to update the interfaces of the Table entry S15. One of ordinary skilled would have been motivated by Virgile to only transmit multicast packets to the defined multicast group to conserve bandwidth (see abstract). Therefore, it would have been obvious to one ordinary skilled incorporate the teaching of Virgile into the MT function of Liebowitz et al to conserve bandwidth.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent Number 4,905,235 teaches TDMA system controlling power of bursts (BTP);

U.S. Patent Number 6,377,561 teaches satellite system for multimedia traffic;

U.S. Patent Number 6,370,143 teaches server to update report data for enabling of broadcast.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Lee whose telephone number is 703-305-1500. The examiner can normally be reached on Monday to Friday from 8:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 703-308-5340. The fax phone numbers

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for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Andy Lee
May 1, 2002